Pacific-Basin Finance Journal 28 (2014) 29–46

Contents lists available at ScienceDirect

Pacific-Basin Finance Journal

journal homepage: www.elsevier.com/locate/pacfin

Do Islamic stock indexes outperform conventional stock indexes? A stochastic dominance approach

Osamah Al-Khazali [a], Hooi Hooi Lean [b,*], Anis Samet [a]

[a] School of Business and Management, American University of Sharjah, UAE
[b] Economics Program, School of Social Sciences, Universiti Sains Malaysia, Malaysia

ARTICLE INFO

Article history:
Received 12 August 2013
Accepted 23 September 2013
Available online 10 October 2013

JEL classification:
G11
G12
G14
G15

Keywords:
Stochastic dominance
Islamic stock index
Ethical investing

ABSTRACT

This paper uses stochastic dominance (SD) analysis to examine whether Islamic stock indexes outperform conventional stock indexes by comparing nine Dow Jones Islamic indexes to their Dow Jones conventional counterparts: Asia Pacific, Canadian, Developed Country, Emerging Markets, European, Global, Japanese, UK, and US indexes. Over the periods of 1996–2012 and 2001–2006, we find that all conventional indexes stochastically dominate Islamic indexes at second and third orders in all markets except the European market. However, the European, US, and global Islamic stock indexes dominate conventional ones during the 2007–2012 period. The results indicate that Islamic indexes outperform their conventional peers during the recent global financial crisis. Thus, Islamic investing performs better than conventional investing during meltdown economy.

1. Introduction

The Islamic finance industry has seen a tremendous growth and innovation during the last decade. This industry is evaluated at $1000 bn in terms of assets under management, including Islamic hedge funds and Islamic bonds (i.e., Sukuk).[1] The demand of Islamic financial instruments is growing at a high pace. Many individual and institutional investors, mainly from Islamic countries, seek to invest only in stocks that are compliant with the Islamic laws (i.e., Sharia). The investment in companies that are compliant with Islamic laws is consistent with socially responsible and ethical investment, where investors select their stocks based on their religious beliefs.

* Corresponding author at: School of Social Sciences, Universiti Sains Malaysia 11800 USM, Penang, Malaysia. Tel.: +60 4 653 2663; fax: +60 4 657 0918.
E-mail addresses: kazali@aus.edu (O. Al-Khazali), hooilean@usm.my (H.H. Lean), asamet@aus.edu (A. Samet).

[1] Source: "Islamic Finance Searches its Soul", Financial Times, December 8, 2010.

0927-538X/$ – see front matter
http://dx.doi.org/10.1016/j.pacfin.2013.09.003

The empirical evidence on the performance of ethical investments compared to their conventional counterparts shows that these ethical investments do not outperform their conventional peers due to many reasons such as the increase in monitoring costs, the smaller size of the investment universe, and restricted potential for diversification.[2] In this paper, from a portfolio performance perspective, we extend the current literature to examine whether returns earned by investors who are tracking the Dow Jones Islamic indexes are significantly different from those of the conventional indexes using a stochastic dominance (SD) approach.

Most of previous studies relied on parametric methodologies to compare portfolio performance.[3] The mean–variance (MV) criterion or capital asset pricing model (CAPM) statistics are the most used methods in the literature. Both approaches use parametric statistics that rely on the normality assumption and depend only on the first two moments to test for portfolio performance, which results in missing important information contained in higher moments. In addition, they depend on quadratic utility functions and are not appropriate if return distributions are not normal or investors' utility functions are not quadratic. The presence of both positive and negative skewness and non-normality in individual and portfolio stock distributions is well documented (Beedles, 1979; Schwert, 1990).

Seyhun (1993) states that results of normality tests suggest that non-parametric methods, such as SD, may lead to different conclusions if results of parametric methods are being driven by violations of their assumptions. SD requires no assumptions about the nature of underlying distributions and imposes fewer constraints on investor's utility function. Also, SD is a technique for ranking investments that avoids many of the assumptions required by other popular ranking methods. For instance, the widely used MV approach requires either the assumption of investors' quadratic utility functions or normal distribution of security returns for accuracy of rankings. By avoiding these restrictive assumptions, the SD technique should be better applicable than alternative models.

In terms of utility functions, the SD requirements depend on the level of SD being tested. Indeed, there are three forms of SD. First, under the first-order SD, utility functions must exhibit non-satiation, where more is preferred to less. Under the second-order SD, non-satiation and risk aversion are required. Finally, under the third-order SD, non-satiation, risk aversion, and decreasing absolute risk aversion are required. The SD is attractive because it is non-parametric where no explicit specifications of the agent's utility function or restrictions on the functional form of the probability distribution are required. Instead, the SD method relies on rather general assumptions about investor non-satiety and risk preferences and considers the entire distribution rather than just the two first moments (Kuosmanen, 2001). The SD decision model that is based upon these qualitative specifications, therefore, should be more generally applicable than a model that relies on an exact mathematical form of utility function or an exact form of statistical distribution for its theoretical validity.[4]

The advantages of SD have motivated prior studies to use this technique to evaluate the performance of mutual funds and portfolio selections. Unfortunately, earlier research was unable to determine the statistical significance of SD. However, recent advances in SD techniques by Davidson and Duclos (2000) allow differences between any two return cumulative density functions to be tested for statistical significance. This SD procedure allows us to identify the negative and positive regions for SD and their levels of significance.

In this study, we employ the SD test proposed by Davidson and Duclos (2000) to find out whether Islamic stock indexes outperform conventional stock indexes. We apply the Davidson and Duclos (2000) test to investigate the characteristics of the entire distribution for Islamic stock indexes and conventional stock indexes, instead of only considering the mean and standard deviation, which is the approach used in most of the existing literature (e.g., Hayat and Kraussl, 2011; Abdullah et al., 2007; Hussein and Omran, 2005).

To test whether Islamic stock indexes dominate their conventional peers, we use daily returns of 18 Dow Jones indexes (nine Islamic and their respective conventional indexes) from 1996 to 2012 and we apply SD approach to compare the performance of these indexes. Over the periods of 1996–2012 and 2001–2006, we find that all conventional indexes stochastically dominate Islamic indexes at second and

[2] See Sauer (1997) and Temper (1991) for more discussion.
[3] These methods are developed by Markowitz (1952), Sharpe (1964), Treynor (1965), and Jensen (1969).
[4] For detailed discussion, see Porter and Gaumnitz (1972).